

# OPERATOR'S MANUAL

# 66475-X

INCLUDING: SERVICE KIT, TROUBLESHOOTING, PARTS LIST, DISASSEMBLY & REASSEMBLY

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(REV. E)

## TWO-BALL STYLE LOWER PUMP END

ALSO COVERS 637098-X43 SERVICE KITS



**READ THIS MANUAL CAREFULLY BEFORE INSTALLING,  
OPERATING OR SERVICING THIS EQUIPMENT.**

It is the responsibility of the employer to place this information in the hands of the operator. Keep for future reference.

### SERVICE KITS

- Use only genuine ARO replacement parts to assure compatible pressure rating and longest service life.
- 637098-X43 for general repair of 66475-XXX lower pump end.

### GENERAL DESCRIPTION

**⚠ WARNING** DO NOT EXCEED MAXIMUM OPERATING PRESSURE AS INDICATED ON PUMP MODEL PLATE.

**⚠ WARNING** REFER TO GENERAL INFORMATION SHEET FOR ADDITIONAL SAFETY PRECAUTIONS AND IMPORTANT INFORMATION.

- This manual only covers the lower pump section, it is one of four documents which support an ARO pump. Replacement copies of these forms are available upon request.
  - 650XXX-XXX-X PUMP MODEL OPERATOR'S MANUAL.
  - GENERAL INFORMATION FOR AIR OPERATED OR HYDRAULICALLY OPERATED PUMPS.
  - LOWER PUMP END OPERATOR'S MANUAL.
  - AIR OR HYDRAULIC MOTOR OPERATOR'S MANUAL
- The two-ball design provides better priming of the lower foot valve. The double acting feature is standard in all ARO industrial pumps, material is delivered to the pump discharge outlet on both the up and down stroke.

### MAINTENANCE

The air / hydraulic motor is completely separate from the lower pump end. This helps to keep the motor from being contaminated by the material being pumped. Periodically, flush entire pump system with a solvent that is compatible with the material being pumped.

Keep solvent cup filled with this compatible solvent. This will keep material from drying on the piston rod, which would drag thru the packings, ruin them and eventually scour the piston rod.

Provide a clean work surface to protect sensitive internal moving parts from contamination from dirt and foreign matter during disassembly and reassembly.

Before reassembling, lubricate parts as required. When assembling "O" rings, or parts adjacent to "O" rings, exercise care to prevent damage to "O" rings and "O" ring groove surface.

### LOWER PUMP END DESCRIPTION CHART

66475 - X X X	
<b>PACKING MATERIAL</b>	
3	Glass Filled Teflon (upper and lower)
C	UHMW-PE (upper and lower)
G	UHMW-PE / Leather staggered (upper and lower)
P	UHMW-PE / Teflon staggered (upper) UHMW-PE (lower)
R	Glass Filled Teflon / UHMW-PE staggered (upper) Glass Filled Teflon (lower)
<b>SPRING ARRANGEMENT</b>	
1	Coil Spring
4	Multiple Wave Spring
<b>PLUNGER TYPE</b>	
3	400 / 17-4 Series Stainless Steel, Hard Chrome Plated, Standard Fit
D	15-5 / 17-4 PH SS, Hard Chrome Plated, Button Type, Large Air Motor
<b>SERVICE KIT SELECTION</b>	
66475 - X X X	
EXAMPLE: Lower Pump End # 66475-C4D	637098 - <input checked="" type="checkbox"/> 43
Service Kit # 637098-C43	Packing <input type="checkbox"/>

### TROUBLE SHOOTING

- **No material at outlet (pump continually cycles).** Check material supply, disconnect or shut off the air supply and replenish the material, reconnect.
- **Material on one stroke only (fast downstroke).** The (21) lower ball may not be seating in the (22) seat (see lower pump disassembly). Remove the ball from the seat, clean and inspect the ball and seat area. If the ball or seat is damaged, replace.
- **Material on one stroke only (fast upstroke).** Check for worn or damaged packings and seals. Replace the packings and seals as necessary.
- **Material leakage out of the solvent cup or material appears on the pump plunger rod.** Relieve the pressure in the pump and tighten the solvent cup until leakage discontinues. If this procedure does not aid in stopping the leakage problem, the upper packings may be worn (see lower pump disassembly). Replace the packings as necessary.



## PARTS LIST

ITEM	DESCRIPTION (Size in Inches)	QTY	PART NO.	[MTL]
1	Solvent Cup	(1)	66479	[C]
5	Retainer Ring	(1)	92214	[C]
6	Outlet Body	(1)	92271	[C]
✓ 7	Gasket	(2)	91736	[Co]
✓ 8	Poly Seal Packing	(2)	92641	[Lu]
9	Tube	(1)	92256	[SH]
10	Stud	(3)	79107	[C]
12	Nut (1" - 14)	(3)	Y11-16-C	[C]
14	Retainer Ring	(1)	92269	[C]
15	Foot Valve Body	(1)	92274	[C]
17	Lock Washer (1")	(3)	Y14-100-C	[C]
✓ 18	Gasket	(1)	92275	[Co]
19	Ball Guide	(1)	92258	[DI]
20	Pin (1/4" o.d. x 2")	(1)	Y148-316	[C]
21	Ball (1.5000" o.d.)	(1)	Y16-148	[SH]
22	Check Valve Seat	(1)	92260	[SH]
26	Plunger Rod (model 66475-XX3)	(1)	93627-1	[PSH]
	(model 66475-XXD)	(1)	94914-1	[PSH]
27	Ball (.8750" o.d.)	(1)	Y16-128	[SH]
28	Seat	(1)	93704-1	[SH]
✓ 30	"O" Ring (3/32" x 1-5/16" o.d.)	(1)	Y327-122	[V]
31	Pin (3/16" o.d. x 1-5/32")	(1)	92467	[C]
33	Adapter	(1)	92465	[C]

ITEM	DESCRIPTION (Size in Inches)	QTY	PART NO.	[MTL]
✓ 38	Gasket	(1)	92317	[Co]
✓ 39	"O" Ring (1/8" x 2-3/4" o.d.)	(1)	Y325-230	[B]
41	Spring (66475-X1X)	(1)	92316	[C]
43	Multiple Wave Spring (66475-X4X)	(1)	93626-1	[SH]
46	Washer	(1)	93213	[SS]
✓ 47	Spring Washer	(1)	92264	[C]
48	Retaining Nut	(1)	92472	[C]
✓ 50	Female Packing Washer	(2)	92266	[Br]
✓ 51	"V" Packing (66475-31X)	(5)	93628-2	[GFT]
	(66475-34X)	(7)	93628-2	[GFT]
	(66475-C4X)	(7)	93628-4	[UH]
	(66475-G4X, -P4X)	(4)	93628-4	[UH]
✓ 52	"V" Packing (66475-G4X)	(3)	93628-1	[L]
	(66475-P4X)	(3)	93628-2	[GFT]
	(66475-R4X)	(3)	93628-4	[UH]
✓ 53	Male Packing Washer	(2)	92267	[Br]
✓ 55	"V" Packing (66475-31X, -34X, -R4X)	(5)	93628-2	[GFT]
	(66475-C4X, -P4X)	(5)	93628-4	[UH]
	(66475-G4X)	(3)	93628-4	[UH]
✓ 56	"V" Packing (66475-G4X)	(2)	93628-1	[L]
✓ 107	Cotter Pin (not shown)	(2)	Y15-47-C	[C]
✓	Items included in Service Kit		637098-X43	

### LOWER PUMP DISASSEMBLY

Note: All threads are right hand.

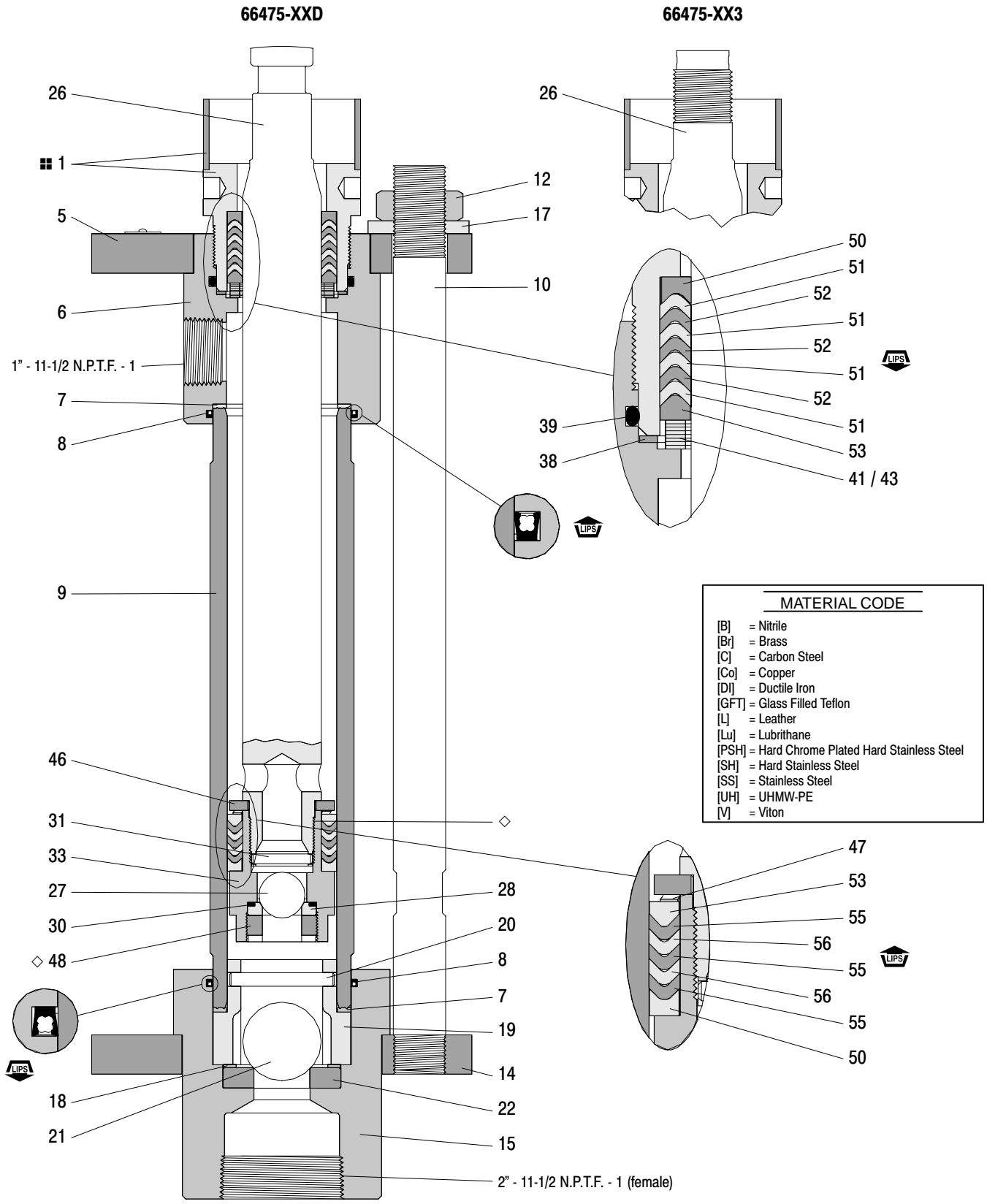
- Remove the three (12) nuts and (17) lock washers.
- Remove upper (5) retainer ring. Loosen (1) solvent cup and pull (6) outlet body from (9) tube and three (10) studs. For further disassembly of outlet body, see steps 11 and 12.
- Pull (9) tube from (19) ball guide.
- Push (33) adapter down until (55 and 56) "V" packings are exposed at bottom of tube. **CAUTION: DO NOT DAMAGE (55 and 56) "V" PACKINGS.**
- Unscrew and remove (48) retaining nut, (28) seat, (30) "O" ring and (27) ball from adapter. Inspect (28) seat.
- Unscrew and remove (33) adapter, (50) female packing washer, (55 and 56) "V" packings, (53) male packing washer, (47) spring washer, (46) washer and (31) pin.
- Remove (19) ball guide from (15) foot valve body. If (19) ball guide is stuck, place a wood dowel through inlet of (15) foot valve and against (21) ball and push (19) ball guide out of foot valve body.
- Remove (7) gasket, (20) pin, (21) ball, (18) gasket and (22) check valve seat. Examine for wear or damage. Note the set of holes the pin is in (19) ball guide.
- Secure (6) outlet body in a vise.
- Unscrew (1) solvent cup and remove (41 or 43) spring, (53) male packing washer, (51 and 52) packings and (50) female packing washer, which can be removed by inserting a blunt object through the top of (1) solvent cup and tapping around (50) female packing washer.
- Remove (39) "O" ring and (38) gasket.
- Remove (8) packing from (6) outlet body.

### LOWER PUMP REASSEMBLY

NOTE: All rubber goods and packings should be lubricated with a compatible lubricant prior to assembly.

- Replace (38) gasket, (8) packing, (39) "O" ring and (7) gasket into (6) outlet body.
- Put (26) plunger rod through (6) outlet body.
- Slide (41 or 43) spring, (53) male packing washer, (51 and 52) packing (lips down) and (50) female packing washer onto (26) plunger assembly.
- Slide (1) solvent cup over (50) female packing washer, (51 and 52) packings, (53) male packing washer and screw (1) solvent cup into (6) outlet body.
- Insert (30) "O" ring into (33) adapter and place (28) seat (beveled edge toward (27) ball) and screw (48) retaining nut to secure (28) seat.
- Turn (33) adapter over and place (27) ball inside (33) adapter. Place (31) pin into (33) adapter.
- Slide (50) female packing washer, (55 and 56) packings (lips up), (53) male packing washer, (47) spring washer and (46) washer onto (33) adapter.
- Screw (33) adapter onto (26) plunger rod and secure.
- Slide (9) tube over (55 and 56) packings and into (6) outlet body. Be sure that (7) gasket is in place.
- Place (22) check valve seat (beveled edges toward (21) ball), (18) gasket and (21) ball into (15) foot valve body.
- Slide (20) pin into holes located on (19) ball guide. Slide (19) ball guide and (7) gasket over (21) ball. NOTE: The (20) pin is positioned in center holes at factory. If more ball lift is desired for heavier (more viscous) material, change pin to upper holes. For less lift (light materials), change pin to lower hole.
- Slide (15) foot valve body into (9) tube.
- Slide (14) retainer ring, with three (10) studs, onto (15) foot valve body.
- Slide (5) retainer ring onto (6) outlet body, over three (10) studs, and secure using three (17) lock washers and (12) nuts.
- Tighten (1) solvent cup.

# PARTS LIST



**FIGURE 1**

**LUBRICATION / SEALANTS**

- Keep solvent cup filled with a lubricant such as Wet Sol "Plus" or equivalent.
- ◇ Apply Teflon tape to threads.

